

DIELECTRIC RESONATOR DEVICE, COMMUNICATION FILTER, AND
COMMUNICATION UNIT FOR MOBILE COMMUNICATION BASE STATION

ABSTRACT OF THE DISCLOSURE

A dielectric resonator device includes two dielectric resonators resonating in first and second resonant modes and a partitioning plate which partitions the two dielectric resonators. Slits S are provided in the partitioning plate. A magnetic loop of the first resonant mode (TE_{01δz} mode) is directed along the length of the slits S. The partitioning plate is also provided with a conductor loop consisting of first and second conductor loop portions that are coupled to magnetic fields of the second resonant mode (TE_{01δy} mode). Accordingly, the coupling of the second resonant mode between the two dielectric resonators can be suppressed by the coupling of a leakage of the magnetic fields passing through the slits S and the coupling of the magnetic fields by the provision of the conductor loop.